Kramer Electronics, Ltd.

USER MANUAL

Model:

VM-2DVI

High Resolution / Dual Link 1:2 DVI Distributor

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This addendum to the **VM-2DVI** user manual describes the **VM-2DVI-R** *1:2 DVI Reclocking Distributor*.

The **VM-2DVI-R** *1:2 DVI Reclocking Distributor*:

- Supports single-link DVI Technology
- Equalizes and reclocks the DVI signal at the end of a long cable(s)
- Effectively reconstructs the DVI signal and retransmits it
- Includes long cable skew alignment that supports the looping of multiple **VM-2DVI-R** units in a chain, while preserving the quality of the original signal
- Does not support HDCP (High Definition Content Protection)

Note that only the digital signal (DVI-D) is available on the DVI connector.

Figure A1 and Table A1 define the **VM-2DVI-R** *1:2 DVI Reclocking Distributor*:

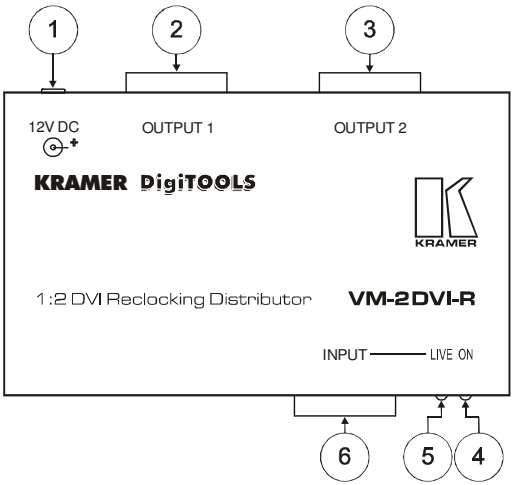

Figure A1: VM-2DVI-R 1:2 DVI Reclocking Distributor

Table A1: VM-2DVI-R 1:2 DVI Reclocking Distributor Features

#	Feature	Function
1	*12V DC*	+12V DC connector for powering the unit
2	*OUTPUT 1* DVI Connector	Connect to the DVI INPUT on the next VM-2DVI-R unit or to a DVI acceptor
3	*OUTPUT 2* DVI Connector	Connect to the DVI INPUT on the next VM-2DVI-R unit or to a DVI acceptor
4	*ON* (Red) LED	Illuminates when receiving power
5	*LIVE* (Green) LED	Automatically Illuminates when an receiving an input signal
6	*INPUT* DVI Connector	Connect to the DVI source

In Table 2 (section 5) on page 4, the bandwidth for the **VM-2DVI-R** is 1.65GHz (other specs remain unchanged).

This addendum adds the following information to the user manual:

Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit[1].

Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

1 For example: model number AD2512C, part number 2535-000251

1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation. In addition to Digital Visual Interface (DVI)[1] DUAL LINK distributors, we also offer excellent distribution amplifiers, high quality switchers and matrices, remote controllers, presentation processors, interfaces and computer-related products. Congratulations on purchasing your Kramer **VM-2DVI** *High Resolution / Dual Link 1:2 DVI Distributor.*

A single DVI LINK has a bandwidth of 165 megapixels per second. If you need higher resolution, use DUAL LINK technology, which is supported by the **VM-2DVI** *High Resolution / Dual Link 1:2 DVI Distributor*.

The **VM-2DVI** is ideal for audio video duplication studios, as well as rental and staging. Each package includes the following items:

- **VM-2DVI** *High Resolution / Dual Link 1:2 DVI Distributor*
- Power adapter (12V DC Input)[2]
- This user manual[3] and the Kramer concise product catalog/CD

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables[4]

1 DVI was designed to provide the industry with a single, universal digital interface (primarily to provide a digital connection between a PC and a display device). It is now considered the industry standard digital graphics interface

2 As an option, you can purchase the Kramer VA-50P 6 Port Universal 12-Volt Power Supply, enabling you to supply power to up to 6 Kramer devices that require 12VDC

3 Download up-to-date Kramer user manuals from the Internet at this URL: http://www.kramerelectronics.com/manuals.html

4 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com (click "Cables and Connectors" in the Products section)

3 Overview

The **VM-2DVI** is a high quality *High Resolution / Dual Link 1:2 DVI Distributor* that accepts a DVI input and distributes the signal to two identical outputs. One or both of the outputs may be connected to receiving devices, since the **VM-2DVI** has independent output drivers, making it a versatile, reliable component in a graphics system.

In particular, the **VM-2DVI**:

- Is a cost-effective solution for distributing the TMDS signals used for DVI, and uses state-of-the-art line drivers on each of the two outputs
- Can be used in any application where more than one DVI monitor, projector or other receiving device is to be driven via a single DVI source

Note that only the digital signal (DVI-D) is available on the DVI connector.

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **VM-2DVI** away from moisture, excessive sunlight and dust

Figure 1 and Table 1 define the **VM-2DVI** *High Resolution / Dual Link 1:2 DVI Distributor*:

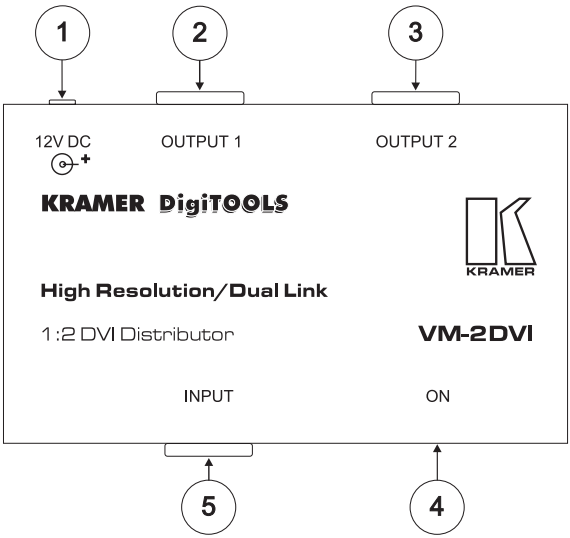

Figure 1: VM-2DVI High Resolution / Dual Link 1:2 DVI Distributor

Table 1: VM-2DVI High Resolution / Dual Link 1:2 DVI Distributor Features

#	Feature	Function
1	*12V DC*	+12V DC connector for powering the unit
2	*OUTPUT 1* DVI (or DVI DUAL LINK) Connector	Connect to the DVI (or DVI DUAL LINK) acceptor 1
3	*OUTPUT 2* DVI (or DVI DUAL LINK) Connector	Connect to the DVI (or DVI DUAL LINK) acceptor 2
4	*ON LED*	Illuminates when receiving power
5	*INPUT* DVI (or DVI DUAL LINK) Connector	Connect to the DVI (or DVI DUAL LINK) source

4 Connecting a High Resolution / Dual Link 1:2 DVI Distributor

To connect the **VM-2DVI**, do the following[1]:

1. Connect a DVI source (for example, a computer) to the INPUT connector.
2. Connect the 2 OUTPUT connectors[2] to up to 2 DVI acceptors, as follows:
   - OUTPUT 1 connector to DVI acceptor 1 (for example, a monitor)
   - OUTPUT 2 connector to DVI acceptor 2 (for example, a projector)
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.

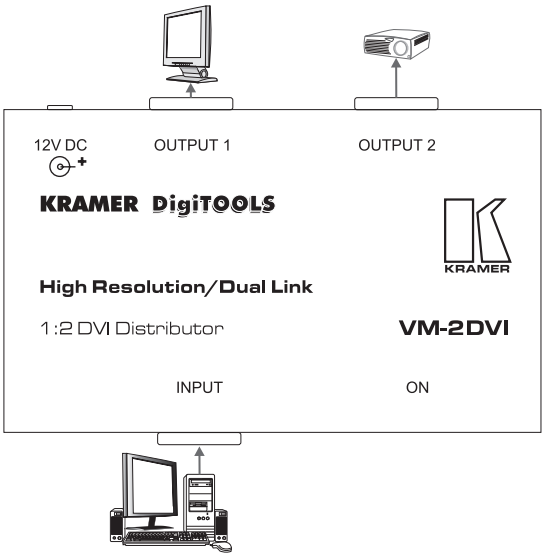

Figure 2: Connecting a VM-2DVI High Resolution / Dual Link 1:2 DVI Distributor

1 Switch OFF the power on each device before connecting it to your VM-2DVI. After connecting your VM-2DVI, switch on its power and then switch on the power on each device

2 If you are using only one DVI acceptor, you should connect it to OUTPUT 1

5 Technical Specifications

Table 2 includes the technical specifications:

Table 2: Technical Specifications[1] of the VM-2DVI

INPUT:	1 DVI[2], 1.2Vpp on a DVI Molex 24pin female connector; DDC signal 5Vpp (TTL)
OUTPUTS:	2 DVI[2], 1.2Vpp on DVI Molex 24pin female connectors; DDC signal 5Vpp (TTL)
BANDWIDTH (-3dB):	>3.3GHz
POWER SOURCE:	12V DC, 390mA
DIMENSIONS:	12 cm x 7.5 cm x 2.5 cm (4.7" x 2.95" 0.98", W, D, H)
WEIGHT:	0.3 kg (0.67 lbs.) approx
ACCESSORIES:	Power Adapter

1 Specifications are subject to change without notice

2 On a DVI-I connector. Note that only the digital signal (DVI-D) is available on the DVI connector

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
   - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   - ii) Product modification, or failure to follow instructions supplied with the product
   - iii) Repair or attempted repair by anyone not authorized by Kramer
   - iv) Any shipment of the product (claims must be presented to the carrier)
   - v) Removal or installation of the product
   - vi) Any other cause, which does not relate to a product defect
   - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.
NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.
This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B – Unintentional radiators"

CAUTION!

- ⌧ Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- ⌧ Use the supplied DC power supply to feed power to the machine.
- ⌧ Please use recommended interconnection cables to connect the machine to other components.

For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

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P/N: 2900-000002 REV 1